



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,472	04/19/2004	Hui-Huang Chang	REAP0468USA	3300
27765 7590 10/05/2007 NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER DICKER, DENNIS T	
			ART UNIT 2625	PAPER NUMBER
			NOTIFICATION DATE 10/05/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com  
Patent.admin.uspto.Rcv@naipo.com  
mis.ap.uspto@naipo.com.tw

**Office Action Summary**

Application No.

10/827,472

Applicant(s)

CHANG ET AL.

Examiner

Dennis Dicker

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/13/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/23/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 8-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 8, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Nomizu (hereinafter "Nomizu '272" US 2003/0095272).
4. As pertaining to claim 8, Nomizu '272 teaches an image processing device (see Figure 30A) comprising: a first buffer unit for storing data of a plurality of pixels (i.e., Fig. 6a, plurality of pixels stored in a memory controller and Para 0031, buffer memory including memory controller being capable of storing data), a first processing unit (i.e., Fig 23, SIMD functions performed), coupled to the first buffer unit (i.e. Fig. 30A, "memory controller A" coupled to "SIMD 33"), for processing the data of the plurality of pixels in accordance with a first function and thereby generating first data (i.e., Fig 23 and Para 0066; SIMD processor generating first data) a second buffer unit (i.e., Memory Controller B of Fig. 30A), coupled to the first processing unit (i.e. Fig. 30A , "SIMD 33" coupled to "memory controller B"), for storing the first data; and a second processing

Art Unit: 2625

unit (i.e. Para 0096, CDIC performs data format conversion), coupled to the second buffer unit (i.e., Para 0324, Image data items transmitted to CDIC), for processing the first data in accordance with a second function and thereby generating second data; wherein the first buffer unit, the first processing unit, the second buffer unit, and the second processing unit are coupled together in series(i.e., Para 0324 and Fig. 30A, Memory Controller A coupled to SIMD 33 coupled to Memory Controller B transmitted to CDIC in series).

5. As pertaining to Claim 10, Nomizu '272 teaches an image processing device, wherein the first and second functions are two of a color processing function [i.e., Fig. 23 and Par 0066, SIMD Processor performing color conversion] and a data formatting function (i.e. Para 0096, CDIC Processor performing data format conversion) with respect to specific I/O apparatuses.

6. As pertaining to Claim 11, Nomizu '272 teaches an image processing device being installed in a scanner or a multi-function peripheral (i.e. Fig. 1 and Para 0039, multi function comprising image processing device).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2625

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nomizu '272 in view of Florent et al (hereinafter "Florent '505" 2003/0026505).

9. With respect to Claim 9, Nomizu '272 teaches an image processing device (see Figure 30A and Para 0002) comprising:

a first buffer unit for storing data of a plurality of pixels (i.e., Fig. 6a, plurality of pixels stored in a memory controller and Para 0031, buffer memory including memory controller being capable of storing data), a first processing unit (i.e., Fig 23, SIMD functions performed), coupled to the first buffer unit (i.e. Fig. 30A, "memory controller A" coupled to "SIMD 33"), for processing the data of the plurality of pixels in accordance with a first function and thereby generating first data (i.e., Fig 23 and Para 0066; SIMD processor generating first data) a second buffer unit (i.e., Memory Controller B of Fig. 30A), coupled to the first processing unit (i.e. Fig. 30A , "SIMD 33" coupled to "memory controller B"), for storing the first data; and a second processing unit (i.e. Para 0096, CDIC performs data format conversion], coupled to the second buffer unit (i.e., Para 0324, Image data items transmitted to CDIC), for processing the first data in accordance with a second function and thereby generating second data; wherein the first buffer unit, the first processing unit, the second buffer unit, and the second processing unit are coupled together in series(i.e., Para 0324 and Fig. 30A, Memory Controller A coupled to SIMD 33 coupled to Memory Controller B transmitted to (CDIC in series nor shown).

Moreover, it is noted that Nomizu '272 does not explicitly teach an image-processing device wherein the plurality of pixels corresponds to a plurality of horizontal lines.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Florent '505. In particular Florent '505 teaches the processing of horizontal lines comprising a plurality of pixels (i.e. Para 0041, processing of horizontal image strips formed of a plurality of pixels).

In view of the above, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the image processing device of Nomizu '272 as taught by Florent '505, since Florent '505 suggested in Para 0041 that such modification is efficient both in high transfer and in weak latency.

10. Claim 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomizu '272 in view of Yoshida et al (hereinafter "Yoshida '999" 6,184,999).

With respect to Claim 12, Nomizu '272 teaches an image processing method executed in an image processing device (i.e., Para 0002 and 0039, Image processing device and data conversion method), comprising: buffering data of a plurality of pixels, the plurality of pixels including one or more pixels (i.e., Fig. 6a, plurality of pixels stored in a memory controller and Para 0031, buffer memory including memory controller being capable of storing data); processing the data of the plurality of pixels in accordance with a first function and thereby generating first data(i.e., Fig 23 and Para 0066; SIMD processor generating first data); buffering the first data(i.e. Fig. 30A , "SIMD 33" coupled to "memory controller B"); and processing the first data in accordance with a second function (i.e. Para 0096, CDIC performs data format conversion], and thereby generating second data (i.e., Para 0324 and Fig. 30A, Memory Controller A coupled to SIMD 33 coupled to Memory Controller B transmitted to CDIC).

Art Unit: 2625

In addition, it is noted that Nomizu '272 does not explicitly teach an image processing method executed in an image processing device wherein the step of processing the first data in accordance with the second function is initiated before all pixels of the certain horizontal line are processed by the step of processing the data in accordance with the first function.

However, the above-mentioned claimed limitations are well known in the art to the ordinary skilled in the art at the time of invention was made as evidenced by Yoshida '999. In particular, the image processing method wherein the step of processing the first data in accordance with the second function is initiated before all pixels of the certain horizontal line are processed by the step of processing the data in accordance with the first function. (i.e., Column 8 Lines 27-36, compression process may be started before the input process is completed).

In view of the above, having the method of Nomizu '272 and then given the well established teaching of Yoshida '999, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the image processing method of Nomizu '272 as taught by Yoshida '999, since Yoshida '999 cited in col. 1 lines 39-42 that such a modification would allow faster image data processing.

With respect to Claim 14, Nomizu '272 teaches an image processing method, wherein the first and second functions are two of a color processing function [i.e., Fig. 23 and Par 0066, SIMD Processor performing color conversion] and a data formatting function (i.e. Para 0096, CDIC Processor performing data Format Conversion) with respect to specific I/O apparatuses.

Art Unit: 2625

With respect to Claim 15, Nomizu '272 teaches an image processing method, wherein the image processing device is being installed in a scanner or a multi-function peripheral (i.e. Fig. 1 and Para 0039, multi function comprising image processing device).

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nomizu '272 in view of Yoshida '999 and further in view of Florent '505.

With respect to Claim 13, Nomizu '272 teaches an image processing method executed in an image processing device (i.e., Para 0002 and 0039, Image processing device and data conversion method), comprising: buffering data of a plurality of pixels, the plurality of pixels including one or more pixels (i.e., Fig. 6a, plurality of pixels stored in a memory controller and Para 0031, buffer memory including memory controller being capable of storing data); processing the data of the plurality of pixels in accordance with a first function and thereby generating first data(i.e., Fig 23 and Para 0066; SIMD processor generating first data); buffering the first data(i.e. Fig. 30A , "SIMD 33" coupled to "memory controller B"); and processing the first data in accordance with a second function (i.e. Para 0096, CDIC performs data format conversion], and thereby generating second data [i.e., Para 0324 and Fig. 30A, Memory Controller A coupled to SIMD 33 coupled to Memory Controller B transmitted to CDIC).

In addition, it is noted that Nomizu '272 does not explicitly teach an image-processing method executed in an image processing device wherein the step of processing the first data in accordance with the second function is initiated before all



Art Unit: 2625

pixels of the certain horizontal line are processed by the step of processing the data in accordance with the first function or wherein the plurality of pixels corresponds to a plurality of horizontal lines and wherein the plurality of pixels corresponds to a certain horizontal line or a plurality of horizontal lines.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Florent '505 and further by Yoshida '999. In particular Florent '505 teaches the processing of horizontal lines comprising a plurality of pixels (i.e. Para 0041, processing of horizontal image strips formed of a plurality of pixels) and Yoshida '999 teaches a method wherein the plurality of pixels corresponds to a certain horizontal line or a plurality of horizontal lines and wherein the step of processing the first data in accordance with the second function is initiated before all pixels of the certain horizontal line are processed by the step of processing the data in accordance with the first function. (i.e., Column 8 Lines 27-36, compression process may be started before the input process is completed).

In view of the above, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the image processing device of Nomizu '272 as taught by Florent '505 and Yoshida '999, since Florent '505 suggested in Para 0041 that such modification is efficient both in high transfer and in weak latency and Yoshida '999 cited in col. 1 lines 39-42 that such a modification would allow faster image data processing.

Art Unit: 2625

**Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, (see PTO-892).

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

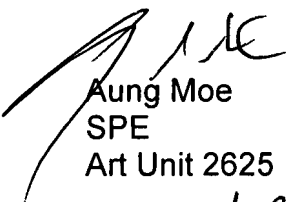
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Dicker whose telephone number is (571) 270-3140. The examiner can normally be reached on Monday -Friday 7:30 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Aung Moe  
SPE  
Art Unit 2625

9/28/07

DD

September 28, 2007